

Chapter 2 Alternatives, Goals, Objectives, and Strategies

2.1 Alternatives

The Service has developed alternatives that represent options for managing the Washington Islands Refuges over the next 15 years. Following are the two alternatives for managing the Refuges:

- Alternative A: No Action (Status Quo).
- Alternative B: Proposed Action (Preferred Alternative).

2.1.1 Alternative A: No Action

The National Environmental Policy Act requires that EAs include an analysis of the “no action” or status quo alternative, against which the effects of “action” alternatives can be compared and evaluated. Under the No Action Alternative, the Refuges would continue to be managed as they have been over the past several years. Essentially, this means that the Service would continue to follow guidance contained in the 1989 revision of the Washington Islands NWRs Management Plan. Management goals outlined in this plan include:

- Provide habitat and protection for endangered and threatened species that are important in the North Pacific Coast.
- Provide habitat to maintain seabird populations at not-less-than current levels.
- Protect habitat to maintain waterfowl and other wildlife at not-less-than current levels.
- Cooperate with agencies of higher education, private organizations and individuals in providing technical assistance and research opportunities.
- Protect and preserve scientific sites located on the Refuges.
- Preserve and protect the unique ecosystems associated with the Washington Islands Refuges.
- Provide a quality program of interpretation.
- Provide opportunity for wildlife/wildlands observations.

Additionally, the Refuges have never been open to the general public and this management would continue. Guidance and Federal mandates that were developed after the 1989 Management Plan was completed would also apply to the No Action Alternative. For example, Executive Order 13175 (Nov. 2000) directs the Service to consult and coordinate with Native American tribal governments. Under the guidance of the recently complete Washington Maritime National Wildlife Refuge Complex Fire Management Plan (see Appendix F) there

would be full suppression of wildland fires. The level and priority for staffing and funding would remain similar to current conditions (see Appendix G). Any changes in this regard would be a result of needs identified through compatibility determinations on an “as needed” basis and/or through the Refuge Operational Needs System (RONS) list on an annual basis (see Appendix G).

2.1.2 Alternative B: Proposed Action

The Refuges are composed of islands and rocks that are extremely important habitat for seabirds, marine mammals, and other wildlife, and are difficult (if not impossible) to safely access. Therefore, all of the Washington Islands NWRs islands will remain closed to public use and access. Because of the unique relationship of Makah, Quileute, Quinault, and Hoh Tribes (Tribes) with the Washington Coast, the scope of tribal access to the Refuges will be discussed through the development of agreements between the Service and each Tribe, in efforts separate from the CCP process. Because of the limited variance that would be possible between “action” alternatives, it was determined that Alternative B would be the only action alternative developed as part of this EA.

The goals, objectives, and strategies described in Section 2.2 are the Proposed Action that refuge staff would follow in implementing a CCP for the Washington Islands NWRs, and therefore, can effectively be considered the Draft CCP. However, the Proposed Action is not yet finalized. It may be modified as a result of comments received on this Draft EA. The Proposed Action presented in the Final CCP will represent the set of objectives and strategies to be carried forward and implemented as part of the Final CCP.

2.2 Goals, Objectives, and Strategies

This chapter presents the goals, objectives, and strategies developed for the Washington Islands NWRs. Goals are broad statements for managing refuge resources and will remain unchanged for the 15-year time frame of the CCP. They derive from the mission of the National Wildlife Refuge System, and purpose and concerns identified for the Washington Islands NWRs. The objectives have been developed from the goals and serve as the framework to guide ongoing decision-making by the Service and coordination with other responsible parties. They are, where possible, quantified statements of a standard to be achieved or work to be accomplished. Strategies further define the objectives as specific tasks intended to guide refuge staff in the activities required to implement the objectives. The six goals developed for the Washington Islands NWRs are:

- Protect migratory birds and other native wildlife and their associated habitats, with special emphasis on seabirds.

- Protect and support the recovery of federally threatened and endangered species and Washington State special status species and their associated habitats.
- Promote and manage the Washington Islands Wilderness Area to maintain its wilderness character and values.
- Promote effective coordination and cooperation with others for the conservation of refuge resources with special emphasis on government agencies and Tribes with adjoining ownership and/or jurisdiction.
- Continue and enhance long-term monitoring and sustain applied research.
- Increase public interpretation and awareness programs to enhance appreciation, understanding, and enjoyment of refuge resources.

2.3 Management Themes

The goals, objectives, and strategies have been categorized according to the following six management themes, each of which has been assigned a two-letter acronym for organizational purposes:

- Wildlife and Habitat Protection and Management (WH)
- Sensitive Species Protection (SS)
- Wilderness Protection (WP)
- Cooperative Programs (CP)
- Research Activity Management (RA)
- Public Education Management (PE)

For each of the management themes, the applicable goals are presented first, followed by the objectives and strategies. Following the strategies is a discussion intended to provide further background and understanding pertaining to the development of each objective and the applicable strategies. Except where noted, all objectives would have a 15-year time frame for completion. All objectives would be carried out by the Washington Islands NWR staff, unless otherwise noted in objective statements.

2.3.1 Wildlife and Habitat Protection and Management (WH)

WH Goal: Protect migratory birds and other native wildlife and their associated habitats, with special emphasis on seabirds.

Objective WH1: Continue to promote an undisturbed, natural environment across the Refuges by prohibiting public access on an ongoing basis.

Achievement Strategies:

- A. Maintain the policy of restricted public access to the Refuges. Enforcement of trespassing policies is addressed under Objectives CP3, CP5, and CP6.
- B. Continue to document incidences of trespass. Results will be summarized in the annual refuge report, as described under Objective CP9.
- C. Work with Olympic National Park and Tribes to develop signs and other deterrents to keep the public off islands that are accessible at low tide. Cooperative efforts under which this program will be carried out are established under Objectives CP1, CP3, and CP5.
- D. Continue and enhance efforts to establish a 200-yard (183 m) boat free zone around refuge islands in cooperation with other appropriate groups.
- E. Work with WDNR, the OCNMS, and the Tribes to secure a 200-yard (183 m) tideland lease area around islands with major seabird colonies.
- F. Assist in the implementation of the regional seabird conservation plan (USFWS 2005).
- G. Negotiate MOUs with Tribes regarding the time, place, and manner of tribal access to the Refuges where appropriate and compatible.

Discussion: Nesting seabirds and marine mammals are particularly vulnerable to human disturbances. Buffer zones have been shown to minimize disturbance to waterbirds (Rodgers and Smith 1997). Islands that are accessible from the mainland during low tides have been identified by refuge staff as vulnerable to potential impacts. Restricting human use of the refuge islands will protect these species from such negative impacts and fulfill Wilderness Area goals. One of the principles of wilderness stewardship is managing human use so that it does not impact the integrity of natural and biological processes (BLM et al. 1995). Offshore islands are dangerous and unstable environments for human use and access; restricting public access will also enhance public safety on the outer coast. For nearshore, low-tide accessible islands, the Service will work with local landowners, such as the ONP and Tribes, to deter trespassing.

Objective WH2: Support regional efforts to reduce the risk of oil spills near refuge islands to protect seabird and other marine wildlife. Activities will include attending periodic drills, meetings and training, and providing on-site resource knowledge in the event of a spill.

Achievement Strategies:

- A. Participate in planning and training efforts that identify opportunities to reduce oil spill risks to the refuge resources.
- B. Support the OCNMS's "Area To Be Avoided."
- C. Support the placement of a mission capable rescue tug boat at Neah Bay.

- D. Send appropriate staff to Hazardous Materials, Shoreline Assessment, and Incident Command training.
- E. Participate in periodic updates of the Outer Coast Geographic Response Plan.

Discussion: Oil spills are considered by refuge staff and CCP commenters to be the biggest threat to the continued health of refuge resources. A 1997 USCG study found that the outer Olympic Peninsula coastline has a high likelihood of an oil spill accident, as well as high sensitivity to oil spills and low capability for response to the spill (*Tenyo Maru* Oil Spill Natural Resources Trustees 2000). Many species, including seabirds and marine mammals, are vulnerable to such pollution events. Prevention and preparation, as exemplified in strategies above, are the keys to reducing oil spill impacts on the refuge islands.

Objective WH3: Coordinate with the USCG to remove all remaining debris on Destruction Island by 2019.

Achievement Strategy:

- A. Initiate cooperative clean-up of debris from Destruction Island by 2009; see Objective CP4.

Discussion: See discussion under Objective CP4.

Objective WH4: Preserve refuge islands in a native condition by monitoring for invasive species and develop control measures on an ongoing basis as appropriate and feasible, starting in 2008.

Achievement Strategies:

- A. Resurvey Destruction Island's rhinoceros auklet and small mammal populations by 2008.
- B. Survey islands for invasive species; and when information exists regarding potential infestations.
- C. Coordinate with regional efforts and create a geographic information system (GIS) database and map of identified infestations. Link this map to treatment records and effectiveness measurements. A refuge GIS is proposed under the Objective WH5 and RA2.
- D. Monitor management efforts for success of control measures and responses of seabirds, and adapt management if results are not satisfactory.

Discussion: Invasive species are a potential threat to the native flora and fauna of the refuge islands, and control of these species may become important in the future. The 1983 annual report for the Washington Islands NWRs stated that there is a "need for alternative control measures of serious pest species." This statement was made in reference to past unsuccessful

efforts to eradicate exotic rabbits on Destruction Island but should extend to all exotic invaders. The purpose of invasive species identification and control is to preserve the integrity of existing natural conditions.

Objective WH5: Promote accurate and effective management of wildlife resources through establishing a system for managing mapped data for the Washington Islands Refuges by winter of 2008.

Achievement Strategies:

- A. Secure the funding needed to develop an in-house GIS.
- B. Acquire all existing natural resource GIS data layers and maps for the Refuges, including bird and marine mammal survey data and other agencies' data including: WDNR, WDFW, NOAA (Fisheries and OCNMS), and Tribes.
- C. Update databases and maps as necessary.
- D. Coordinate with the Service's regional efforts to develop a GIS database of all seabird colonies and key roost sites in the region with information on ownership, protected status seabird species, breeding status, and abundance. (see USFWS 2005: objectives 1a (v) and 7f)

Discussion: Conservation and management of resources requires ready access to current information on the entire system and its integration into management decisions. Many of the resources associated with the Refuges have been inventoried and mapped. These databases can be very useful to management if acquired and updated routinely. For example, GIS can provide preparation for and enhance response to catastrophic events like oil spills by enabling the Service to quickly and accurately identify resources at risk.

Objective WH6: Develop an aircraft impacts awareness program to reduce overflight-induced wildlife disturbances on the refuge islands starting in 2006.

Achievement Strategies:

- A. Continue to produce educational materials that will be distributed to airports, popular landing strips, aircraft associations, aircraft publications, and aircraft-based businesses. See CP7 for cooperative efforts for evaluating and disseminating this information.
- B. Promote the 2,000-foot (610 m) minimum flight altitude over the islands.
- C. Record any observed incidents and report violation trends to appropriate law enforcement personnel and to the FAA.

Discussion: Protection of wildlife species, especially seabird populations, is a primary refuge goal. Refuge biologists, ONP staff, OCNMS staff, and conservation groups have all brought attention to the incidences of overflight disturbances on the refuge islands. These incidents

disrupt seabird and marine mammal breeding and resting activities. Currently, there is a OCNMS-regulated, 2,000-foot (610 m) minimum flight altitude over the refuge islands. The Service will cooperate in a proactive approach to educate the public on low overflights and their impact on refuge wildlife. Documenting the occurrences of overflights will aid in communicating the problem to the FAA and the public with regards to the level of disturbances.

Objective WH7: Starting in 2006, develop and implement a boating impacts awareness education program to reduce boating disturbance to wildlife.

Achievement Strategies:

- A. Produce educational materials that will be distributed to marinas, boat ramps, popular kayak launch areas, boating associations, boating publications, and boat-based businesses.
- B. Promote establishing a 200-yard (183 m) boat-free zone around the islands.
- C. Monitor boating activity near refuge islands.
- D. Enforce trespass regulations for the Refuges. Enforcement of trespassing policies is addressed under Objective CP3, CP5, and CP6.

Discussion: Boating has been identified by the refuge staff, local citizens, and conservation groups as a source of impacts to nesting seabirds and resting marine mammals. However, there is a public desire to boat in the area and to increase ecotourism boating opportunities. Refuge islands will need to be protected from near-refuge boat impacts, thereby allowing for undisturbed wildlife nesting, feeding, and resting activities. Nesting seabirds and marine mammals have been documented in scientific literature to be particularly vulnerable to disturbances (see Affected Environment for further discussion on this topic). Creating a buffer zone of 200 yards (183 m) around the islands that is free from boating disturbances will benefit these sensitive species. In addition, off-shore islands are dangerous environments; restricting public access will also enhance public safety on the outer coast.

Objective WH8: Develop a new refuge headquarters located at the Dungeness National Wildlife Refuge to assist in the effective and efficient management of refuge resources.

Achievement Strategy:

- A. Demonstrate need and secure funding for new facility.

Discussion: Effective refuge management needs supporting infrastructure. Current refuge headquarters are not sufficient for management, research, or educational program needs. This objective calls for increased facility support to meet the demands of the Refuges.

2.3.2 Sensitive Species Protection (SS)

SS Goal: Protect and support the recovery of federally listed threatened and endangered species (TES) and birds of conservation concern (BCC), and Washington State special status species and their habitats.

Objective SS1: Continue coordination with others to identify, monitor, protect, and contribute to the recovery of plants and animals that are federally listed as: TES; proposed or candidates for Federal listing as TES; federally listed as BCC; State-listed as threatened, endangered, or sensitive; proposed or candidates for State listing; or State priority species.

Achievement Strategies:

- A. Update and add existing data on sensitive species into GIS database. A refuge GIS is established under Objective WH5 and RA2.
- B. Secure funding for continued monitoring of peregrine falcons, bald eagles, Steller sea lions, and brown pelicans.
- C. Provide protection for State-listed species occurring on refuge islands.
- D. Determine population status of Destruction Island shrew.

Discussion: The Service enforces Federal wildlife laws, including the Endangered Species Act (16 USC 1531 et seq.), and is responsible for assisting other Federal and State agencies in the recovery of listed species. The responsibilities of an individual refuge include these Service-wide duties for species protection. Mapping and identification of key habitat areas are important first steps for managing sensitive species. Peregrine falcon eyries, bald eagle nest sites, Steller sea lion haul sites, and sea otter and brown pelican use areas have been documented, mapped, and entered into a WDFW non-game data system. Establishing an in-house GIS system will facilitate access to existing data and will expedite refuge management. Monitoring is an important next step to ascertain the population levels and trends of sensitive species and key life history parameters for refuge populations. This information will assist in the sound management of sensitive species such as the Destruction Island shrew.

2.3.3 Wilderness Protection (WP)

WP Goal: Protect and manage the Washington Islands Wilderness Area to maintain its wilderness character and values.

Objective WP1: Preserve and enhance the wilderness character of the Refuges by removing human-generated debris from refuge islands, where feasible, on an ongoing basis.

Achievement Strategies:

- A. On scheduled visits to islands, search and remove debris if possible.
- B. Where appropriate, seek clean-up assistance from the U.S. Navy, USCG, volunteer groups, Tribes, and other agencies. Cooperative efforts with the U.S. Navy and USCG are established under Objectives CP4 and CP8.

Discussion: The Wilderness Act defines wilderness as an area which is protected and managed to preserve its natural conditions and which generally appears to have been affected primarily by the forces of nature with the imprint of man's work substantially unnoticeable. This objective provides for the enhancement of wilderness character through clean-up of man-made debris that is environmentally and aesthetically undesirable.

Objective WP2: Continue to promote and preserve the wilderness characteristics of the Refuges by prohibiting visually intrusive alterations on Refuge islands on an ongoing basis.

Achievement Strategy:

- A. Review visual intrusion aspects of all research projects on the Refuges to ensure low intrusion levels.

Discussion: Under the Wilderness Area designation (1970), the refuge islands (except Destruction Island) shall be protected in their pristine and natural conditions. The Service recognizes its obligations under this designation and has put forth this objective to preserve the visual characteristics of the area. The purpose of this objective is to allow refuge staff to evaluate proposed actions on refuge islands from a visual impact perspective and prohibit those with predicted negative results.

2.3.4 Cooperative Programs (CP)

CP Goal: Through effective coordination and cooperation with others, promote conservation of refuge resources, with special emphasis on governmental agencies and Tribes with adjoining ownership or jurisdiction.

Objective CP1: By 2006, begin working with Tribes on issues and resources of mutual interest to promote conservation.

Achievement Strategies:

- A. Meet annually or more often if needed, with Tribes.
- B. Identify areas of mutual interest including research and monitoring. See Service-identified areas of interests under Objectives WP1, Objective RA1, and Objective PE3.

- C. Provide annual updates on the year's activities. This strategy is also addressed under Objective RA6.
- D. Negotiate memorandums of understanding with Tribes regarding the time, place, and manner of tribal access to the Refuges where appropriate and compatible.
- E. Work on resolving any ambiguities between Native American reservation and refuge boundaries.

Discussion: The Hoh, Makah, Quinault, and Quileute Tribes have all expressed interest and concern for natural and cultural resources on the refuge islands. These islands are also important to the Tribes for tribal identity and spirituality. The Service will continue to work with the Tribes on a government-to-government basis to address areas of mutual interest and concern.

Objective CP2: Beginning in 2006, work with WDFW on issues and resources of mutual interest to promote conservation.

Achievement Strategies:

- A. Continue joint wildlife surveys with WDFW; see cooperative projects under Objective SS1.
- B. Explore joint research opportunities with WDFW; see Objectives RA1 and RA4.
- C. Coordinate with WDFW law enforcement to protect refuge wildlife.
- D. Report accomplishments in periodic reports and/or publications.

Discussions: Cooperation between WDFW and the Service will help both agencies by sharing information, funding, and expertise. WDFW shares many interests with the Service, including: continuing joint wildlife surveys, educational programs, species management, and developing joint research projects.

Objective CP3: Coordinate with the Tribes, the OCNMS, ONP, and WDNR in managing for the protection and conservation of intertidal and subtidal zones surrounding the refuge islands by fall 2006.

Achievement Strategies:

- A. Jointly identify zones, jurisdictions, and land use policies for intertidal and subtidal areas by 2006.
- B. Jointly develop a conservation policy and enforcement plan for intertidal and subtidal zones by 2010; see Objectives WH4 and WP1.
- C. Jointly monitor for marine debris and implement measures for its removal.

Discussion: The intertidal and subtidal zones of the refuge islands are important habitats; not only are they vital to the continued health of many unique flora and fauna, but they are also

the entry way for the terrestrial island habitats. Land use policies must be designed to protect both tidal and terrestrial habitats. The intertidal and subtidal land management is complicated with jurisdictional overlay. The intent of this objective is to pull together all agencies with jurisdiction and interest in the island tidelands to identify jurisdictional zones, definitions, and policies for conservation of refuge habitats.

Objective CP4: Coordinate with the USCG to update the existing MOU for Destruction Island, which will clarify the roles of the two agencies on the island and thereby aid in the conservation of refuge resources by 2008.

Achievement Strategy:

- A. The MOU will address USCG and Service operations and maintenance; see Objective WP1.

Discussion: Destruction Island is a unique island within the Refuges due to overlapping jurisdictions for the Service and USCG. There is an existing MOU; however, it needs to be revised to address current concerns. Refuge concerns for Destruction Island include wildlife disturbances and debris impacts. Disturbance and pollution can negatively impact many sensitive refuge wildlife species, especially nesting seabirds, bald eagles, and the endemic Destruction Island shrew. This objective is needed to allow the Service and USCG to address these mutual issues of concern.

Objective CP5: Coordinate with the NPS to update the existing MOU for joint refuge law enforcement on low-tide accessible islands by 2008.

Achievement Strategies:

- A. The MOU will address trespass law enforcement, educational programs, coastal island jurisdiction, and refuge boundaries; see Objectives WP1, WP2, RA1, and Objective PE3.
- B. Secure joint funding for a seasonal ranger, stationed along the coast. The duties of this ranger will include law enforcement and education.

Discussion: Law enforcement is extremely difficult on off-shore islands. The islands are difficult to gain access to and even to patrol. Teaming the NPS with the Service will boost the effectiveness of law enforcement for both agencies. The enforcement of the no-trespass policy is important in protecting vulnerable wildlife, research projects, and natural resources. Understanding Tribal access agreements will be an important component of the ranger's duties.

Objective CP6: Coordinate with the OCNMS to develop an MOU covering mutual resource issues by 2007.

Achievement Strategy:

- A. The MOU will address trespass law enforcement, oil spill response planning, overflight restrictions, boating (sport and commercial) restrictions, educational programs, and refuge jurisdiction/boundaries; see Objective WH1, Objective RA1, and Objective PE3.

Discussion: The overlap between the OCNMS and the refuge islands represents a management challenge for NOAA and the Service. The common goal between the resource managers is habitat protection; however, details for specific issues need to be developed. Oil spill preparation is a topic that many local citizens and regional conservation groups are concerned about. Other issues this objective will address include law enforcement, jurisdictional definitions, and educational opportunities. The public also voiced concern over the confusion generated from multi-agency control over the region. It is clear that all involved or interested in the conservation of the region would benefit from the clear definitions of roles and policies.

Objective CP7: Reduce wildlife disturbances on refuge islands by continuing to work with the FAA to eliminate overflight disturbances by establishing a minimum flight altitude of 2,000 (610 m) feet over islands by spring 2008.

Achievement Strategies:

- A. Working with the FAA, jointly identify refuge areas on aeronautical charts and develop “notice to pilots.”
- B. In communications with the FAA, stress bird-strike safety concerns for pilots.
- C. Coordinate with ONP and the OCNMS on carrying out an overflight impacts education program that will promote the 2,000-foot (610 m), flight-free ceiling over the refuge islands. Use educational materials developed under Objective WH6.
- D. Coordinate with the ONP, OCNMS, and Tribes on monitoring for overflight incidence and wildlife response as opportunities arise and document results in annual reports.

Discussion: Protection of seabird populations is a primary refuge goal. Refuge biologists, ONP staff, and conservation groups have all brought attention to the incidences of overflight disturbances on the refuge islands. These types of disturbances have been documented to disrupt seabird and marine mammal breeding and resting activities. Currently, the OCNMS has established a minimum flight altitude of 2,000 feet (610m) for aircraft flying over the islands. The FAA is the enforcement agency of the aircraft industry. To maintain a minimum overflight altitude over the Refuges, the FAA needs to support the policy. This objective encourages bringing these two agencies to the table to discuss the issue and ways to prevent overflight disturbances.

Objective CP8: Beginning in 2007, work with the U.S. Department of Defense (DOD) on issues and resources of mutual interest to promote conservation.

Achievement Strategy:

- A. The joint program will address clean-up of debris and unwanted structures; see Goal WP, Objective WP1.

Discussion: The DOD (U.S. Navy and Air Force) has a long history (1944-1993) of utilizing the refuge islands for bombing practices. Private citizens, conservation groups, and refuge biologists are concerned about the remaining military debris on off-shore islands and its potential impacts to the ecosystems. This objective provides an opportunity for the Service to initiate discussions with the DOD (U.S. Navy and Air Force) about island clean-up and other issues remaining regarding land use by the military.

Objective CP9: Promote cooperation and long-term conservation of refuge resources by producing an annual summary report every March starting in 2006.

Achievement Strategies:

- A. The Service will produce a complex-wide annual narrative report as a partial source for the summary report.
- B. The report will include a summary of research/monitoring activities and findings; trespass and disturbance incidents; major management actions; listing of publications and public lectures made by refuge staff or associated researchers; staff names and responsibilities; educational program activities; and other highlights that occurred on the Refuges. See Objective WH1.
- C. The summary report will be mailed to associated agencies, Tribes, and interested parties.

Discussion: Research results are often available only to the scientific community. The purpose of this objective is to communicate refuge research results to the interested public, as well as other agencies, to increase understanding of the refuge islands, regional ecosystem, and natural resources. This report will not only communicate research results but also staff changes, educational program activities, and other highlights. All these items will foster a sense of community for the regional context of the Refuges. Due to the restricted nature of the islands, the public is distanced from refuge activities. This annual report will be a method for the Service to reach out once a year to inform the public and organizations about their work and ongoing concerns. This will promote support and respect for the Refuges.

2.3.5 Research and Monitoring Activity Management (RA)

RA Goal: Continue and enhance long-term monitoring of wildlife and habitat resources and sustain applied scientific research.

Objective RA1: Continue to promote management-related research and monitoring.

Achievement Strategies:

- A. Establish and develop partnerships with Tribes, State and other Federal agencies, as well as universities and conservation groups to pursue joint research projects.
- B. Encourage research organizations to perform cooperative research projects that explore factors affecting refuge wildlife, especially the effects of overflight and boater disturbance on seabirds and marine mammals, and gillnet impacts on sea otters and seabirds.
- C. Identify and pursue funding opportunities.

Discussion: The National Wildlife Refuge System encourages compatible research activities on refuge lands. Research and monitoring projects on refuge islands enhance scientific understanding of the ecosystems and lead to better management. Long-term monitoring efforts are extremely valuable in terms of the information provided and in adaptive management techniques. Human use issues are likely to increase in terms of pressures on the refuge resources due to developing local and regional markets. This may lead to additional and new types of human impacts. This is likely to present management challenges, which can be approached with proactive applied research projects and long-term monitoring efforts.

Objective RA2: Update the refuge seabird monitoring plan by 2009, to benefit seabird populations.

Achievement Strategies:

- A. Assist in the development of a monitoring manual for California Current System (CCS) seabirds and integrate it with the refuge seabird monitoring plan.
- B. Provide GIS training to refuge staff and map seabird colonies using GIS and population parameters, such as population estimates, and any obtainable reproductive data.
- C. Integrate refuge GIS data with GIS seabird colony catalogues for Washington, Oregon, and California.
- D. Continue annual common murre, cormorant, and brown pelican inventories.
- E. Continue peregrine falcon reproductive surveys as an indicator of the health of the Cassin's auklet and storm petrel populations, which are difficult to monitor.
- F. Update population estimate of rhinoceros auklets on Destruction Island and institute regular population monitoring.

- G. Update population estimate of black oystercatcher on Destruction Island and institute regular population monitoring.
- H. Explore non-invasive methods of determining population sizes of tufted puffin and ancient murrelet at key refuge breeding colonies.
- I. Continue to monitor refuge islands' bald eagle populations in cooperation with other agencies and Tribes.
- J. Contribute to implementing the Regional Seabird Conservation Plan and North American Waterbird Conservation Plan.

Discussion: Seabird research has been carried out on the refuge islands for over 25 years. The purpose of this objective is to ensure that this work not only continues but is enhanced and improved to provide refuge management and resource managers with the tools to make conservation decisions. Due to natural history traits, seabirds are a difficult fauna to study and understand. Long-term research and directed applied studies better our understanding of these resources. Population estimates are a basic database that needs to be established to make informed management decisions for the Refuges and for world-wide preservation. It has been shown that long-term monitoring programs of water-based avian species can substantially contribute to improvements for recovery from oil spills and other catastrophes (Parsons 1996). The Service is working with USGS and other seabird experts to develop a comprehensive monitoring program for CCS seabirds that involves standardized protocols for data collection, analyses, and reporting. Integration of refuge monitoring with this regional effort will provide a broader context for analyses of trends and environmental and human-caused factors that influence these trends.

Objective RA3: Continue to promote the publication and communication of monitoring and research findings by refuge staff on an ongoing basis.

Achievement Strategies:

- A. Encourage refuge staff to continue publishing in peer-reviewed scientific journals.
- B. Encourage refuge staff to attend professional society and agency sponsored meetings/conferences.
- C. Promote dissemination of relevant agency reports (also see strategy CP9).

Discussion: Communication of monitoring and research findings is the responsibility of the Service. Presentation of results and ideas helps foster the understanding and respect for refuge management actions. Dissemination of scientific information also leads to conservation of natural resources through understanding and informed management decisions. Research presentation also provides a forum for research and management improvements through the peer-review forum. The Service should pursue peer-reviewed presentations to maintain a high caliber of refuge research. Refuge scientists will also be encouraged to include research findings in public interpretive programs. Information on the

locations of extremely fragile natural resources or those subject to vandalism will not be included in final studies and reports for public distribution.

Objective RA4: Promote regional conservation through developing compatible and comparable research/monitoring methods and data on an ongoing basis.

Achievement Strategies:

- A. Modify seabird and marine mammal monitoring methods to make them as comparable as possible to other monitoring programs along the west coast (also see strategy RA2).
- B. Require outside researchers to use regionally comparable field methods while performing work on the Refuges, where feasible and appropriate.
- C. Coordinate with the WDFW, Tribes, and other Federal agencies involved in monitoring efforts for opportunities for compatible development.

Discussion: Modification of databases and methods to be comparable and compatible to other research is a cost-effective way to conduct comprehensive refuge research. Being able to compare refuge data with other local, regional, and even global data will help guide ecosystem management priorities for refuge resources. It will also promote the Service's ecosystem approach to resource management, as well as enhance the world-wide scientific connection and understanding.

Objective RA5: Increase effective management of the Refuges by establishing a comprehensive refuge office research library of current and previously published relevant scientific papers and publications, maps, photos, reports, theses, and dissertations, including those resulting from research and monitoring projects conducted on the Refuges and in the surrounding region, by 2009.

Achievement Strategies:

- A. Obtain copies of all reports and other materials relevant to the Refuges.
- B. Provide library training for refuge staff.
- C. Pursue funding for including library space in the new office. See Objective WH5.
- D. Scan copies of unpublished reports to provide computer backup.
- E. Archive photographs and maps.
- F. Develop data management system for storage and retrieval of monitoring and other data.

Discussion: The research that has been conducted along the outer coast has led to the current understanding and formation of remaining questions about the uniqueness and value of the Refuges' natural resources. Documentation and understanding of past and current research will contribute to future studies and management actions.

2.3.6 Public Education Management (PE)

PE Goal: Increase public interpretation and awareness programs to enhance appreciation, understanding, and enjoyment of refuge resources.

Objective PE1: Promote appreciation and interpretation for the Refuges through the development and project implementation of a visitor contact center located at Dungeness NWR as soon as funding is appropriated.

Achievement Strategy:

- A. This will be a joint facility with the new Washington Maritime National Wildlife Refuge Complex headquarters. See Objective WH8.

Discussion: Interpretation and education as essential to increasing public support for wildlife resources and in turn the National Wildlife Refuge System. Providing a visitor contact center, is an important step in making the educational connection to the public, especially for the Washington Islands Refuges where access is prohibited. The restricted nature of the islands calls for well-developed off-site visitor contact and interpretation centers.

Objective PE2: Promote refuge awareness and understanding of wildlife resources by developing a website for the Washington Maritime National Wildlife Refuge Complex by 2006.

Achievement Strategies:

- A. Include on the website photographs and natural history information on refuge islands and how they are used by breeding seabirds and marine mammals.
- B. Place an annual biological summary and other pertinent reports or announcements on the website.
- C. Provide website maintenance training to refuge staff.

Discussion: The Service can use the World Wide Web to reach a broader audience with their environmental educational programs. This medium will provide worldwide awareness and appreciation for the regional and worldwide context of the Refuges' resources. The website can offer a virtual visit to the restricted refuge islands. This medium will also provide the Service with input and collaboration on a worldwide scale, which is particularly important with marine and avian resources that commonly cross international borders.

Objective PE3: Promote refuge conservation and awareness by coordinating with other agencies, Tribes, and organizations to develop off-site interpretive facilities by 2008.

Achievement Strategies:

- A. Coordinate with ONP and the OCNMS to develop an interagency interpretive center at Kalaloch.
- B. Coordinate with Washington State Parks and Recreation Commission, Washington Department of Transportation, ONP, and the OCNMS to develop off-refuge viewing and interpretation opportunities.
- C. Coordinate with Tribes on development and placement of interpretive exhibits/materials on tribal lands.
- D. Establish a remote viewing camera on at least one seabird colony and coordinate the placement of a viewing screen at a high public use area on the outer coast, and also provide a link to the seabird colony on the refuge website.
- E. Hire seasonal interpretive staff to work at interagency interpretive center at Kalaloch.

Discussion: Current off-site interpretation facilities exist but are very limited and are in need of repair and upgrading. Off-site interpretive panels within the Olympic National Park at Rialto Beach, Second Beach, Ruby Beach, and Kalaloch are extensively weathered, missing, or need repair. The National Wildlife Refuge System Improvement Act (PL 105-57) identifies compatible environmental education as a priority wildlife dependent use for Refuges. The impacts of human disturbances and difficulty of access on the refuge islands prevent the educational programs from being located on the islands. Off-site facilities are used as an alternative for providing public education about refuge resources. This method offers local visitors and residents a way to experience the islands without detrimental impacts to the resources. The technique of remote viewing by a video camera will provide public observation of refuge wildlife. Tribal, State Parks, and ONP cooperation is needed because the only vantage points from the mainland are from their lands. These areas are highly utilized by the public, and it is from these areas that visitors see the islands and become interested in the island ecosystems.

Objective PE4: Satisfy public desires to see charismatic species and learn about the Refuges by developing traveling interpretive displays and handout materials about refuge wildlife by 2007.

Achievement Strategies:

- A. Seek funding for a permanent outdoor recreation planner staff position.
- B. Seek funding for traveling refuge interpretive displays and materials on refuge wildlife.
- C. Update refuge wildlife fact sheets and brochures.

Discussion: Annually, over one million visitors view the Refuges, creating a tremendous opportunity to provide information about the Refuges and the resources requiring protection. The outdoor recreation planner position is critical for planning/coordinating and

implementing an interpretive/education program. The impacts of human disturbance and difficulty of access on the refuge islands prevent the Service from locating educational programs on refuge islands. Traveling displays and materials could be used as an alternative for providing public education about refuge resources. This method offers diversity and flexibility to education providers to reach the largest audience possible. These strategies also address public requests for ecotourism without impacts to wildlife.

2.4 Common Features Among the Goals, Objectives, and Strategies

Effective and efficient management of the Refuges is dependent on reliable and well-synthesized data. Hence, there are some common themes that run across many of the goals, objectives, and strategies. For example, development of cooperative efforts, monitoring plans, and a GIS, as well as annual report writing, are all repeated in many places throughout the various goals, objectives, and strategies. Appendix E-1 contains a “minimum requirements analysis” (MRA) as described in wilderness stewardship planning policy, for research, monitoring, and clean-up activities in wilderness. Additional MRAs would be prepared if implementation of strategies involved the use of motor vehicles, motorized equipment, aircraft landings, mechanical transport, or structures or installations in designated wilderness areas. Researchers requesting a permit to conduct research on the Refuges which is not already covered under the existing MRA will be required to complete an MRA for refuge manager approval.

Groups of organized associations or entities can often achieve more when working together than separately. The Service recognizes that cooperation among Federal, State, and tribal agencies serves to promote management stability and enhance regional conservation efforts. It is with this holistic approach in mind that the Service will attempt to obtain natural resource and management agreements between the Service and other neighboring agencies, such as the WDNR, WDFW, USCG, NOAA, other State and Federal agencies, and Tribes. Cooperative efforts may include island clean-up, law enforcement, data exchange, and coordinating research and monitoring efforts. The Service already works cooperatively through the Puget Sound Interagency Communication Center for wildland fire suppression on the Washington Maritime National Wildlife Refuge Complex, of which Washington Islands NWRs are a part. See the Summary of the Fire Management Plan in Appendix F.

Refuge wildlife monitoring is a priority for the National Wildlife Refuge System (USFWS 1999). Refuge monitoring plans include a wide array of data collected on natural resources such as seabirds, marine mammal, threatened and endangered species, and human disturbance impacts. Monitoring efforts across long time periods provide extremely useful data, especially in highly dynamic systems such as the marine refuge islands. Environmental changes and uncertainty are very common in marine systems, as exemplified by El Niño and other oceanic fluctuations. These fluctuations can add uncertainty as to the validity of short-term scientific research; the only way to counter this problem is through long-term studies. Long-term

monitoring data support adaptive management procedures, which the Service promotes nationwide.

The use of GIS is a useful method for organizing and synthesizing complex data sets on a spatial scale, such as the Service would be producing through the proposed monitoring and research projects. It enables the Service to look at multiple layers of data across a spatial scale. This powerful instrument is very useful in resource management decision-making, although it must be made very clear that the results of GIS data analysis are only as accurate as the data put into it. GIS can help the Service effectively guide research and management directives.

Drafting an annual report will be an important data compilation and review tool, which will help the Service manage the Refuges holistically and inform the public and other agencies about their current activities. This report will include narrative summaries of monitoring programs, island disturbances, and other events involving the islands or their resources over the previous year.

2.5 Comparison of Alternatives

Table 2-1 highlights and compares some of the actions associated with the two alternatives. These comparisons are organized based on the key planning issues identified in Chapter 1. No attempt was made to include all actions.

Table 2-1: Comparison of Alternatives

Issues	Alternative A :No Action	Alternative B: Proposed Action
Public Awareness	-Off-site interpretation would remain limited to a few highway panels.	-Develop a visitor contact station with interpretive exhibits and a resource library at new headquarters. -Develop a website to provide public information on breeding seabirds and marine mammals. -Seek funding for a staff position to implement an off-site education program to include boating and aircraft impact awareness.
Interagency and Tribal Coordination	-Current coordination and cooperation levels would remain in place. -MOUs currently exist with NPS and USCG. -Communication and coordination is limited.	-Seek increased agency cooperation to implement oil spill preparation measures. -Develop cooperative plans to clean-up pollution and debris left by USCG and U.S. Navy. -Develop MOUs with Tribes to better address refuge management with respect to Treaties, relevant federal laws, and the Service's Native American Policy. -Provide annual activity updates to increase coordination and cooperation.
Disturbance	-No 200-yard boat-free zone. -Cooperative agreements with ONP to enforce trespassing would continue.	-Increase efforts to establish a 200-yard boat-free zone and a 2,000-foot minimum flight altitude around islands. -Reduce trespassing events by enhancing cooperation with ONP and the Tribes.
Monitoring and Research	-Current long-term monitoring and applied scientific research levels would continue.	-Participate in a regional seabird plan to guide refuge activities toward seabird conservation. -Encourage compatible research and long-term monitoring to enhance refuge management. -Develop a library and spatial data (GIS) that would increase the refuge capacity to effectively manage biological resources.
Contaminants	-The current level of protection against oil spills would not change. -Contaminants and debris on Destruction Island and Sea Lion Rock may continue.	-Enhance oil spill readiness efforts. -Facilitate clean-up of contaminants on Destruction Island. -Survey other islands for pollution and cleanup as necessary over time.
Invasive Species Management	-Information available on presence of invasive species would remain limited.	-Initiate invasive species management strategies such as reduction/removal of European rabbits on Destruction Island.